



# VIEW Certified Configuration Guide

Siemens

HiPath Wireless System with 2610, 2620 APs

January 2008 Edition 1725-36071-001 Version C

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# Introduction

SpectraLink's Voice Interoperability for Enterprise Wireless (VIEW) Certification Program is designed to ensure interoperability and high performance between SpectraLink 8000 Wireless Telephones and WLAN infrastructure products. The products listed below have been thoroughly tested in SpectraLink's lab and have passed VIEW Certification. This document details how to configure Siemens HiPath C10, C100, C1000 Wireless Controllers and 2610 & 2620 access points (APs) with SpectraLink 8000 Wireless Telephones.

Manufacturer:	Siemens HiPath Wireless: http://enterprise.usa.siemens.com/products/solutions/ hipathwireless.html					
Approved products:	Wireless Controllers	Access Points				
	C10 <sup>†</sup>	2610 <sup>†</sup>				
	C100	2620 <sup>†</sup>				
	C1000					
RF technology:	802.11b/g					
Radio:	2.4 – 2.484 GHz					
Security:	WPA-PSK, WPA2-PSK					
AP firmware version tested:	3.1.4.03.03					
SpectraLink handset models tested:	e340/h340/i640	8020/8030				
SpectraLink handset software tested:	89.124	122.010 or greater				
SpectraLink radio mode:	802.11b	802.11b				
Maximum telephone calls per AP:	10 10					
Recommended network topology:	Switched Ethernet (recommended)					

# **Certified Product Summary**

<sup>†</sup> Denotes products directly used in VIEW Certification testing

## **Known Limitations**

- Beacons are sent from the AP inconsistently; therefore you may see decreased battery life on the handsets.
- A hex-key is not supported with both WPA-PSK and WPA2-PSK. You must use a passphrase for each.
- Because the Controller configures a virtual subnet, broadcast data cannot be sent to the handsets.



# **Network Topology**

The following topology was tested during VIEW Certification. It is important to note that these do not necessarily represent all "certified" configurations. The access points were powered through a mid-span POE adaptor.



\*All clients are on their own 'Virtual Subnet', per SSID

# **Installing Software & Configuration**

- **1.** If software upgrades are required, contact Siemens Customer Support for the latest version of software and instructions.
- 2. The current version of software installed can be found by opening a telnet session of the AP and typing the command **version**, or by looking at the configuration GUI under **Wireless APs** and selecting the general tab for the AP in the field **s/w version**.
- If you encounter difficulties or have questions regarding the configuration process, please contact your Siemens representative or visit the web site <u>http://enterprise.usa.siemens.com/products/solutions/hipathwi</u> <u>reless.html</u>

# **Initial Setup**

- **1.** The following instructions are for configuring a wireless controller and a number of access points with no prior configuration.
- **2.** All of the initial setup is done via a web interface. Connect a 'Cross-Over' Ethernet cable directly from the Management Port of the controller to a PC's Ethernet port.
- **3.** Log onto the controller by opening a web browser and connect to https://192.168.10.1:5825/. The default username is **admin**; the default password is **abc123**.
- **4.** Do this step only if it is necessary to reset the controller back to its factory default configuration:
  - a. Click the Wireless Controller button to open the Wireless Controller Configuration screen.
  - b. In the navigation pane, click System Maintenance.
  - c. Click the Reset database to factory default and reboot button.
  - d. Click the Apply button. This will reset the database and cause the controller to reboot. It will take three to four minutes before the controller is finished.

# **Controller Setup**

The setup steps described below refer to the network topology diagram shown in this document. Make sure all the access points are disconnected from the system if configuring the system for the first time.

### Assigning an IP address to a wireless controller

- 1. Log onto the controller by opening a web browser and connect to https://192.168.10.1:5825/. The default username is **admin**; the default password is **abc123**.
- 2. Click the Wireless Controller button.
- 3. In the navigation pane, click IP Addresses.
- 4. Change the value of esa0 to 192.168.110.10 for the IP Address, and to 255.255.255.0 for the Subnet mask.
- 5. Select the **Mgmt** and **SLP** check boxes for this port only (thus turning it on). Leave these unchecked (off) for the other ports.
- **6.** For **Function**, select **Host Port** if static routing is used. Otherwise, select **Dynamic Port** if Open Shortest Path First (OSPF) is being used for routing and routing advertisements.
- 7. Enter **esa0** for **Multicast Support.** Refer to the screen shot shown below.
- 8. Click the Save button.



This is for topologies where the SpectraLink 8000 Telephony Gateway(s) and SVP Servers are located adjacent to the esa0 port, as was done in this VIEW Certification test. In topologies where the setup is different, this multicast setting should be configured to whichever port the SpectraLink servers are adjacent to. This setting permits proper wired replication of multicast data from the wireless subnet.

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Mitigator	I Sut	P Address: 192.168	3.10.1 5.255.0	Secondar	y DNS:				
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#### Assigning routing protocols to a wireless controller

- **1.** In the **Wireless Controller** screen, click **Routing Protocols** in the navigation pane.
- 2. Enter 0.0.0.0 for the Destination Address and 0.0.0.0 for the Subnet Mask. Add the appropriate address for the Gateway.
- 3. Click the **Save** button.



If dynamic routing (OSPF) is being used, then the default route should be set automatically. However, it is always recommended that you assign a temporary static route in dynamic environments to allow the device to operate immediately without having to wait for the initial updates. Be sure to clear the check box for **Override dynamic routes**. This will allow dynamic routes to be the default once they arrive.

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### **AP** registration

- 1. Click the Wireless APs button.
- 2. Click **AP registration** in the navigation pane.
- **3.** Enter all information for your APs (see screen shot below). Make sure the setting for **Security Mode** is selected to **Allow all Wireless APs to Connect.**
- 4. Click the **Save** button.



This setting allows new APs to be added to the system automatically. Once the addition of APs is complete, it is recommended to switch this setting back to **Allow only approved Wireless APs to connect**.

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#### **AP** maintenance

- 1. In the Wireless APs screen, click AP Maintenance in the navigation pane.
- 2. Select the proper image file in the **AP Images** box and click the **Set as default** button.
- 3. Under Upgrade Behavior select the Upgrade when AP connects using settings from Controlled Upgrade option.
- 4. Select the **Do not upgrade AP images if current image version = upgrade version** check box.
- 5. Under Downgrade Behavior, select the Automatically downgrade AP to default image if AP is at later release number (major/minor rev) check box.

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6. Click the **Save** button.

### Setting up SSID, Security and QOS

- 1. Click the VNS Configuration button.
- 2. Click the **Topology** tab.
- 3. Assign a subnet for clients for a specific SSID.
- 4. Under DHCP Settings:
  - a. Enter the appropriate address for the Gateway
  - b. For Mask enter 255.255.255.0.
  - c. The address range should default to 192.168.121.2 –
     192.168.121.254. Change this if you want a limited range of addresses assigned to this subnet.
  - d. No DNS Servers or WINS is required.
- 5. Set the Timeout Idle: pre and post to 2.
- 6. Under Next Hop Routing, set the OSPF Route Cost to 50000.
- 7. Enter an **SSID** name.
- 8. Under Wireless APs, select the **b/g** check box for each AP.
- 9. Click the **Save** button.

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## **Filtering**

- 1. In the VNS Configuration screen, click the Filtering tab.
- 2. Select Default from the Filter ID drop-down list.
  - a. Select all three options In, Out and Allow.
  - **b.** Leave the **IP:Port** as **\*.\*.\***.
- 3. Select Non-Authenticated in the Filter ID drop-down list.
  - a. Select all 3 options In, Out and Allow.
  - **b.** Leave the **IP:Port** as **\*.\*.\***.
- **4.** Click the **Save** button.



A more secure setup for this topology might be:

Allow	192.168.121.*	UDP
Allow	192.168.110.*	UDP
Allow	192.168.123.*	UDP
Disallo	<i>N</i> *.*.*.* N/A T	

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## **Multicast configuration**

- 1. In the VNS Configuration screen, click the Multicast tab.
- 2. Select the Enable Multicast Support check box.
- 3. From the **Defined groups** drop-down list, select or enter **Spectralink SVP (224.0.1.116)** and click the **Add** button.
- **4.** Enable **Wireless Replication** for the multicast selection by selecting the check box beside the entry.
- 5. Click the **Save** button.

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### Security

- 1. In the VNS Configuration screen, click the Privacy tab.
- 2. For WPA2 AES-CCKM, click the **WPA-PSK** option, clear the **WPA v.1** check box, then select the **WPA v.2** check box.
- **3.** For WPA TKIP, click the **WPA-PSK** option, clear the **WPA v.2** check box, then select the **WPA v.1** check box.
- 4. Enter the appropriate pass phrase in the **Pre-shared key** field.
- 5. Click the **Save** button.



There is no hex key available at this time.



#### **Quality of service**

- 1. In the VNS Configuration screen, click the Policy tab.
- From the Quality of Service drop-down list, select Voice VNS w/o WMM; this is required for SpectraLink phones.
- 3. Click the **Save** button.

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#### Setting up other SSIDs

- **1.** Repeat the above steps, starting at step 1.
- **2.** Create a new SSID and DHCP pool as before. Each SSID has its own sub-net.
- **3.** Use the same filtering settings as before.
- 4. Set up privacy as required.
- 5. If creating a sub-net for data, select **Best Effort** in the **Policy** page.

Make sure the proper SSID is selected on each page as it is being configured.

## Connecting access points to the controller

- **1.** Click the **Reports** button.
- **2.** Make sure the controller is configured to accept new APs (this is selected by default).
- **3.** Physically connect the access points to the system one at a time. Once an AP is connected to the system, it will show up in the **Active Wireless APs** screen of the **Reports** menu.
- **4.** Press F5 to refresh the screen.

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Active Wireless APs - 192.168.10.1 Data as of Feb 08, 2006 03:36:51 pm								Dat	a as of Fel	08, 2006 03	:36:51 pm
Wireless AP Serial	AP IP	Clients	Home	Tunnel Duration	Packets Sent	Packets Rec'd	Bytes Sent	Bytes Rec'd	Uptime	802.11b/g Ch/Tx	802.11а Ch/Тх
Spectra 1 050000523000096	192.168.110.12	10	Local	19:36:28	33972015	33891835	5780913786	5776808965	19:35:13	10/4%	a off
Spectra 4 050000523000114:	192.168.123.11	0	Local	0:00:12	0	0	0	0	n/a	auto/0%	a off
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#### Wireless APs address assignment

- **1.** After all the APs have been connected and discovered by the controller, click **Wireless APs** tab.
- 2. Click the Static Configuration tab.
- **3.** Select an AP to configure. The AP's name will default to their MAC address.
- 4. Under IP Address Assignment click either the Use DHCP or the Static Values option. If selecting Static Values, assign the proper values.
- 5. Under Wireless Controller Search List add the IP address of the controller port.
- 6. Repeat steps 4 and 5 for each access point.
- 7. Click the **Save** button.

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### For each AP, follow the steps in the following sections:

#### **AP** properties

- **1.** In the **Wireless APs** screen, click the **AP Properties** tab. Select an AP to configure. Here you can assign a meaningful name to each AP.
- **2.** Enable **Telnet Access**. This is useful for troubleshooting the setup and configuring security settings.

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## 802.11b/g settings

- 1. In the Wireless APs screen, select the 802.11 b/g tab.
- **2.** Select an AP to configure.
- 3. Under Base Settings:
  - a. Set the DTIM Period to 3.
  - b. Set the Beacon Period to 100.
  - c. Set the RTS/CTS Threshold to 2346.
  - d. Set the Frag. Threshold to 2346.

- 4. For Enable Radios, select the 802.11b check box.
- 5. Under Radio Settings:
  - **a.** Select the appropriate **Channel** and **Tx Power Level**. (Note: DRM values will override this setting, if enabled).
  - **b.** Set the **Diversity** to **Best**.
  - c. Set the Min Basic Rate to 1 Mbps.
  - d. Set the Max Basic Rate to 11Mbps.
  - e. Set the Max Operational Rate to 11Mbps.
  - **f.** Set the **Preamble** to **Short** (note that the value **Long** works as well).
- 6. Click the **Save** button.

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## Enable the radio

- **1.** Click the **VNS Configuration** button.
- 2. Click the **Topology** tab.
- **3.** Enable each AP's b/g radio for each SSID.
- 4. Set No. of Retries for Voice VO to adaptive (multi-rate) and No. of Retries for Turbo Voice TVO to 2.
- 5. Click the **Save** button.



After the controller and access points are set up, the Management port is no longer required. The Controller can now be managed through the Host Port, or the esa0 port in this configuration. Open a browser and connect to https://<ip address>:5825.